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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/477,570	01/06/2000	DANIEL J. KNABENBAUER	AUS990884US1	9429

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EXAMINER	
NGUYEN, KEVIN M	
ART UNIT	**PAPER NUMBER**
2674	19

DATE MAILED: 10/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/477,570	KNABENBAURER, DANIEL J.	
	Examiner	Art Unit	
	Kevin M. Nguyen	2674	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 July 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,4-24,26 and 28-49* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2,4-24,26 and 28-49* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. Applicant's arguments, see pages 11-15, filed 7/22/2003, with respect to the rejections of claims 2, 4-24, 26 and 28-49 under the statutory basis for the previous rejection have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Krembs (previously cited), Mayer (newly cited) et al and MacFarlane (IDS).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 2 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krembs "previously cited" (US 3,585,443) in view of MacFarlane "IDS" (US 5,801,666).

As to claims 2 and 26, Krembs teaches a three-dimensional display, comprising:

a three dimensional matrix (5) of light emitting elements capable of generating images in three dimensions (7); and

a base coupled to the three dimensional matrix, the base having electrical circuitry (11) for powering and controlling the three dimensional matrix, wherein the light emitting elements are pixels "the intersection of a plane of glass wires 1 and glass wires 3" and, wherein each include a cell of the intersection of anodized glass wires (1,3)

making cubic pixels that would perform as an anode and a cathode; and a gas volume (see figure 1, column 2, lines 10-30).

Krembs fails to teach "wherein each of the pixels has a red light emitting element, a green light emitting element, and a blue light emitting element". However, MacFarlane teaches the physical elements which are arranged in three-dimensional array of voxels (column 2, lines 20-23); red, green, and a blue voxels (column 2, lines 61-62). It would have been obvious to a person of ordinary skill in the art at the time of the invention to utilize red, green, and a blue voxels taught by MacFarlane for Krembs's monochromatic three dimensional display system because this would improve the variety of the color "RGB" image being displayed (column 2, lines 60-64), while fabricating the three dimensional display system with reduce or prevent cross-talk (column 3, lines 8-9 of MacFarlane).

4. Claims 2, 4-14, 19-24, 26, 28-40, 31-33 and 45-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mayer et al "newly cited" (US 3,790849) in view of MacFarlane.

As to claims 2 and 26, Mayer et al teaches a three-dimensional display, comprising:

a three dimensional matrix of light emitting elements capable of generating images in three dimensions; and

a base (12) coupled to the three dimensional matrix, the base having electrical circuitry (108, 126) (column 3, lines 30-50) for powering and controlling the three dimensional matrix, wherein the light emitting elements are pixels "the intersection of

glass wires at grids 52, 54, 56" (column 6, lines 1-8); wherein each include a cell (102) the intersection of anodized glass wires at grids 52, 54, 56 making cubic pixels that would perform as an anode and a cathode (column 6, lines 1-29 and column 7, lines 3-11); a gas volume 17, and a phosphorus material (see figure 9, column 6, lines 27-52)

Mayer et al fails to teach "wherein each of the pixels has a red light emitting element, a green light emitting element, and a blue light emitting element". However, MacFarlane teaches the physical elements which are arranged in three-dimensional array of voxels (column 2, lines 20-23); red, green, and a blue voxels (column 2, lines 61-62). It would have been obvious to a person of ordinary skill in the art at the time of the invention to utilize red, green, and a blue voxels taught by MacFarlane for Mayer et al's monochromatic three dimensional display system because this would improve the variety of the color "RGB" image being displayed (column 2, lines 60-64), while fabricating the three dimensional display system with reduce or prevent cross-talk (column 3, lines 8-9 of MacFarlane).

As to claims 4 and 29, Mayer et al teaches the intersection of anodized glass wires at grids 52, 54, 56 making cubic pixels that would perform as an anode and a cathode (column 6, lines 1-29 and column 7, lines 3-11). MacFarlane teaches red, green, and a blue voxels (column 2, lines 61-62). It would have been obvious to a person of ordinary skill in the art at the time of the invention to utilize red, green, and a blue voxels taught by MacFarlane for Mayer et al's monochromatic three dimensional display system because this would improve the variety of the color "RGB" image being

displayed (column 2, lines 60-64), while fabricating the three dimensional display system with reduce or prevent cross-talk (column 3, lines 8-9 of MacFarlane).

5. Mayer et al teaches the intersection of anodized glass wires at grids 52, 54, 56 making cubic pixels that would perform as an anode and a cathode (column 6, lines 1-29 and column 7, lines 3-11). It would have been obvious matter of design choice to arrange anodes taught by Mayer et al as the anode of a one of the pixels is shared by at least one other pixel, since applicant has not disclosed that having the anode of a one of the pixels is shared by at least one other pixel solved any stated problem or is for any particular purpose and it appears that the intersection of anodized glass wires at grids 52, 54, 56 making cubic pixels that would perform as an anode and a cathode equally well with the anode of a one of the pixels is shared by at least one other pixel, recited *in claim 5;* the cathode of a one of the pixels is shared by at least one other pixel, recited *in claim 28*; the anode of a one of the pixels is shared by one or more other pixel, recited *in claim 30;* a face of one of the pixels is shared by another pixels, recited in *claims 6 and 31*; the side of the pixel is the side of the another neighboring pixel, recited in *claims 7 and 32.* Relocation is generally recognized as being within the level of ordinary skill in the art. In addition, the relocation of a well-known element is normally not directed toward patentable subject matter, *In re Japikse*, 86 USPQ 70 (CCPA 1950).

As to claims 8 and 33, Mayer et al teaches electrical (108, 126) connecting between the pixels, signal source "X signal" and power sources "voltage signal Y" are positioned in seams between pixels, column 3, lines 30-50).

As to claims 9, 34 and 35, Mayer et al teaches the intersection of anodized glass wires at grids 52, 54, 56 making cubic pixels that would perform as an anode and a cathode (column 6, lines 1-29 and column 7, lines 3-11) replying to the limitations an anode bus line is positioned in a seam from a first anode of a pixel to a second anode of another pixel; and a cathode bus line is positioned in a seam from a cathode of a pixel to a cathode of another pixel.

As to claims 10-12 and 36-38, Mayer et al teaches the intersection of anodized glass wires at grids 52, 54, 56 making cubic pixels that would perform as an anode (column 6, lines 1-29 and column 7, lines 3-11). MacFarlane teaches red, green, and a blue voxels (column 2, lines 61-62). It would have been obvious to a person of ordinary skill in the art at the time of the invention to utilize red, green, and a blue voxels taught by MacFarlane for Mayer et al's three dimensional display system because this would improve the variety of the color image being displayed (column 2, lines 60-64), while fabricating the three dimensional display system with reduce or prevent cross-talk (column 3, lines 8-9 of MacFarlane) relying to the limitations a first anode of a first red, green, blue light emitting element of a pixel is connected to a second anode of a second red, green, blue light emitting element in another pixel by a straight line bus connection along a seam in any direction in the three dimensional matrix.

As to claims 13 and 39, Mayer et al teaches the intersection of anodized glass wires at grids 52, 54, 56 making cubic pixels that would perform as an anode and a cathode (column 6, lines 1-29 and column 7, lines 3-11) replying to the limitations a first

cathode of a first pixels is connected to a second cathode of a second pixel by a straight line connection along a seam in any direction in the three dimensional matrix.

As to claims 14, Mayer et al teaches the intersection of anodized glass wires at grids 52, 54, 56 making cubic pixels, and based on the **Pythagorean theorem** "the theorem that the sum of the squares of the lengths of the sides of a right triangle is equal to the square of the length of the hypotenuse" that would perform equally well with the distance between two adjacent anodes is a square root of two multiplied by a length of one side of a pixel.

As to claims 15-18 and 41-44, Mayer et al teaches the intersection of anodized glass wires at grids 52, 54, 56 making cubic pixels that would perform as an anode and a cathode (column 6, lines 1-29 and column 7, lines 3-11). MacFarlane teaches *red, green, and a blue voxels* (column 2, lines 61-62). It would have been obvious to a person of ordinary skill in the art at the time of the invention to utilize *red, green, and a blue voxels* taught by MacFarlane for Mayer et al's three dimensional display system because this would improve the variety of the color image being displayed (column 2, lines 60-64), while fabricating the three dimensional display system with reduce or prevent cross-talk (column 3, lines 8-9 of MacFarlane). It would have been obvious matter of design choice to arrange anodes taught by Mayer et al such as *the distance between the anode/cathode and the anode/cathode of the first RGB light emitting element and the second RGB light emitting element is twice the length of one side a pixel*, since applicant has not disclosed that having *the distance between the anode/cathode and the anode/cathode of the first RGB light emitting element and the*

second RGB light emitting element is twice the length of one side a pixel solved any stated problem or is for any particular purpose and it appears that the intersection of anodized glass wires at grids 52, 54, 56 making cubic pixels that would perform such as an anode and a cathode would perform equally well with *the distance between the anode/cathode and the anode/cathode of the first RGB light emitting element and the second RGB light emitting element is twice the length of one side a pixel.* Relocation is generally recognized as being within the level of ordinary skill in the art. In addition, the relocation of a well-known element is normally not directed toward patentable subject matter, *In re Japikse*, 86 USPQ 70 (CCPA 1950).

As to claims 21-23 and 46-48, MacFarlane teaches specific voxels are selected for activation by switching network 8. Computer 12 associated with a storage medium that may control the switching nework 8, as well as other components of the three-dimensional monitor system (col. 6, lines 37-40). The three dimensional monitor of the present invention may also be combined with conventional two dimensional monitors, such as cathode ray tubes and television displays (col. 8, line 66 through col. 9, line 1).

As to claims 24 and 49, MacFarlane teaches a three dimensional array of optical voxels in a cubic packed configuration other voxels placement geometries may be utilized in this invention (figure 2 and 4A, col. 4, lines 64-67).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Kevin M. Nguyen** whose telephone number is **703-305-6209**. The examiner can normally be reached on MON-THU from 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard A Hjerpe** can be reached on **703-305-4709**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered response should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Kevin M. Nguyen
Patent Examiner
Art Unit 2674

KN
September 26, 2003

RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600